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ENRICHMENT IN HIGH SCHOOL ENGLISH:
A RATIONALE AND PROPOSAL

by

BEVERLEY SAWYER

A THESIS

SUBMITTED TO THE FACULTY OF GRADUATE STUDIES AND RESEARCH

IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE

OF MASTER OF EDUCATION

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MASTER OF EDUCATION

1982

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Enrichment in High School English:

A Rationale and Proposal

submitted by Beverley Sawyer

in partial fulfilment of the requirements for the degree of

Master of Education

.....
Supervisor

.....

.....

Date September 30, 1982

ENRICHMENT IN HIGH SCHOOL ENGLISH: ABSTRACT

This study presents a rationale and proposal for enrichment in high school English. The lack of such programming is discussed, along with arguments commonly used both for and against it. But concern does seem to be growing, as indicated by recent conferences and the establishment of a government task force to study the matter. Within this context, the writer considers the implications of Guilford's understanding of the intellect and of Renzulli, Reis and Smith's procedures for programming for the gifted (Structure of Intellect and Revolving Door Identification models, respectively). On the basis of these two models, a proposal is made by which enriched English courses could be offered to selected students.

The emphasis in recent literature on the nature of intelligence has been on the variety of its aspects. The best known of the various factor theories is Guilford's Structure of Intellect model, which regards intellectual functions as falling into three categories (operations, products and content). Each category is further subdivided, so that a total of 120 factors are possible (5 operations x 6 products x 4 contents). Every intellectual activity can then be identified in terms of its factor.

Application of this model to the Alberta English 10-20-30 Statement of Content produces interesting implications. First, the emphasis is clearly on expression of various kinds, rather than on the intake and storage functions. Secondly, the kinds of expression encouraged are those requiring fluency and flexibility, rather than "right answers" (divergent production and evaluation rather

than convergent production). The dominant product factor is systems, suggesting an analytical focus, an awareness of the way in which interdependent parts are organized within a composition or a work of literature. English students, then, are required to work with complex structures in a variety of ways. To enhance their intellectual abilities, Guilford suggests that students' education should emphasize reception, production and evaluation of information, with attention being paid to as wide a range of products and operations as possible within each course.

Such a strategy is compatible with that proposed by Renzulli in the Revolving Door Identification model for enriched education of gifted students. His definition of giftedness is based on recent research which emphasizes a broad spectrum of abilities rather than reliance merely on IQ. Above-average ability, creativity, and task commitment are equally important components. Once students who meet these criteria have been identified, they are placed in a Talent Pool, where they engage in a variety of information-receiving, research and critical thinking activities. When individual members of the Talent Pool are ready for creative/productive involvement in a particular task, they are revolved into the Resource Room, and then revolved back out when the project is completed.

The two models analyzed provide the framework for a proposal to offer enriched English 10, 20 and 30 courses to talented high school English students. Guilford provides the theoretical rationale to justify the assumption that students may have particular ability in

one subject, and Renzulli suggests a means by which arrangements can be made. A variety of procedures should be used to identify the top 10 percent of a school's English students, who would be encouraged to register in a special section of their English course. This class could then be offered a qualitatively different curriculum, within the framework of the provincial English requirements, but allowing for the kind of treatment suggested by both Guilford and Renzulli, at minimal cost. Such arrangements would be a significant step forward in meeting the needs of gifted students.

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CHAPTER ONE

The Problem

Introduction

The need for special education for exceptional children has long been recognized by educational authorities in Alberta. However, the focus has generally been on those students regarded as "handicapped", whose needs are relatively easily seen and acknowledged. Special programs, and even special schools, have been established for the educable mentally retarded, the slow learner, and the deaf, for example.

Those who are exceptionally bright, in comparison to the "handicapped", have been largely left to their own devices by public school systems, without any particular attention to special needs they may have as an identifiable group of exceptional children. For example, Mitchell (1978) reports that only two U.S. states have identified and provided special educational services for the top 3% of their students, although 23 have done so for the top 1%. Closer to home, and more recently, a Canadian Education Association (CEA) survey conducted in 1978, and replicated in Alberta in 1981 by the Department of Education, produced the following information about availability of special programs:

Q. 1 Does Your Board Make Special Provisions for Gifted and Talented Students?

	Alberta %	Canada %
Yes	30	37

Q. 4(a) Does Your Board Have a Specific Written Policy for Educating Gifted and Talented Students?

	Alberta %	Canada %
Yes	29	26

However, this survey did not ask for a description or definition of eligible students, so it is difficult to tell precisely what needs are seen as being met by the "special provisions" made. Obviously, the number of jurisdictions making such provisions remains a definite minority, both provincially and nationally. It seems evident, too, that in some cases programs are offered on an ad hoc basis, without the rationale or framework of a written policy.

Various reasons have been suggested for this relative lack of coherent programming for bright students. Lack of money, lack of perceived need, and lack of expertise are often mentioned. Perhaps the most potent concern, though, is that such attention may be a form of elitism, incompatible with democratic principles. Weiler's (1978) comment is representative of many, in her charge that "California has instituted a class consciousness worthy of medieval Europe and surpassed only in Huxley's Brave New World. What Huxley calls Alpha children, California terms 'Mentally Gifted Minors...'" (p. 185). Emerson (1979) counters this type of criticism with the point that

> one of the paradoxes of our society is that the more we treat people equally, the more we increase their inequality. Conversely, if we want people to end up with equal status,

> equal positions and equal achievement, we must treat them in an unequal manner (p. 54).

In other words, is the main point to aim for achievement of the same specific standards for all students (that is, aim for the average), or to promote development of each individual to the extent of his capabilities? The statement of objectives in the "Goals of Education" (Alberta Education, 1981) is clear in this regard: "The ultimate aim of education is to develop the abilities of individuals in order that they might fulfill their personal aspirations while making a positive contribution to society" (p. 4).

A concern that the individual abilities and needs of bright students have been somewhat neglected seems to be the basis for recent attention to the subject. The CEA and Alberta Department of Education surveys mentioned above are indicative of such interest. Shortly after the provincial study was undertaken, the local chapter of the Association for Bright Children held a conference on the subject at the University of Alberta (June, 1981), the attendance at which far exceeded the organizers' expectations. One significant part of the conference was an address by the Minister of Education, the Honourable David King, in which he indicated that he shared the concern that the needs of this special group of children be carefully considered. Subsequent to the conference, the Department of Education established a task force headed by Dr. Helene MacLeod, which is to present its findings and recommendations by December, 1982. A second conference on the gifted was held in May, 1982, at the University of Calgary, and a third is being planned for May, 1983, again at the University of Alberta.

In light of this growing interest, it seems worthwhile to give particular attention to both the theoretical foundations and the actual process of programming for various subjects. Specifically, this study analyzes the implications of Guilford's Structure of Intellect model for the Alberta English Curriculum and, in accordance with this theoretical basis, adapts Renzulli, Reis and Smith's enrichment model in a proposal designed to meet the needs of the most able English students in Alberta senior high schools.

Purpose

Recent research in the area of giftedness shows increasing recognition of the complexity of the subject. Guilford's Structure of Intellect studies are often credited with providing the impetus for subsequent investigations (including Torrance, Gowan, Khatena and Renzulli, all referred to in the review of related literature in Chapter 2) which have confirmed that a multitude of factors contribute to one's intellectual characteristics, and that individuals will have varying amounts of ability in each of these factors. Educators such as Jewett and Renzulli have applied their understanding of gifted students' qualities to curriculum, and have shown that adaptations to "standard" curriculum must be made in order to meet the needs of students who have high ability in various subject areas.

The purpose of this study is to investigate a perspective, a possible way of viewing and implementing a program for high school students gifted in English. After considering recent research which explores the multi-faceted nature of intelligence and the implications

of this understanding for school programs, the potential implications of one particular enrichment plan -- Renzulli's Revolving Door Identification model (1981) -- for the Alberta English Curriculum will be discussed.

As will be seen, the Revolving Door Identification model proposes a restructuring of the usual format of gifted programs. It re-examines questions of identification and selection of students, definition of giftedness, and implementation of the program, with a main focus on the elementary school situation. In order to be applicable to high schools, significant adaptations would be required. This investigation, then, synthesizes three elements in order to present a unified structure for the conduct of a program for gifted English students:

(1) Guilford's Structure of Intellect model

(2) Renzulli's Revolving Door Identification model

(3) the Alberta Senior High School Language Arts Curriculum

The study considers whether a program developed through such synthesis would be academically valuable and politically defensible, challenging and worthwhile for students, and financially and administratively feasible. If a positive conclusion is drawn, school jurisdictions would have available to them a plan which could do much to meet the expectation that all students, including the gifted, have a right to education designed for their needs.

Definitions

Such terms as intelligence, creativity, giftedness and enrichment

obviously require definition. However, such definitions will be developed within the context of consideration of recent research, rather than presented here.

Delimitations

First, this study is not intended to have a field research component. There has been no attempt to gather information or compile statistics about programs presently in existence. The emphasis is on what could be done, rather than on what is being done, within the context of recent research on the subject. (A possible exception might be the writer's awareness of and participation in the enrichment English program at Jasper Place Composite High School in Edmonton, described by Hamilton, 1981.)

Second, the specific curricular details are restricted to the area of high school English. While some of the research may be applicable to other levels and disciplines, such consideration is beyond the scope of this study.

Limitations

It is necessary here to acknowledge my own bias in favour of making special provision for gifted students. I firmly believe that gifted students should be identified and provided for, just as should any student with special learning needs.

Design of the Study

The main body of the study consists of the following sections:

(1) a detailed analysis of the Alberta English 10-20-30 curriculum (Iveson, "Statement of Concepts and Skills", 1982) in terms of Structure of Intellect. Attention is restricted to these courses, the Grade 10, 11 and 12 matriculation stream, on the assumptions that this would be the route gifted students (as later defined) would normally take, and that a special program would have to accept the demands of these courses as minimum requirements. Use of Structure of Intellect functions as a means for analysis is consistent with Gowan's (Khatena, 1979, p. 698) identification of this model as an appropriate basis for curriculum development. While the writer is aware of other theories of intelligence, they did not seem appropriate for this particular study. Piaget's stages of mental development, for instance, have little apparent value for a detailed analysis of a curriculum at the high school level. Likewise, the "g" factor in some of the recent British work (such as Vernon's Hierarchical Group Factor theory) has limited applicability to discussion of a curriculum in terms of the intellectual operations it requires. The detail in Guilford's model facilitates a detailed analysis of the kind undertaken here.

(2) an adaptation of Renzulli's Revolving Door Identification model for application to Alberta Senior High School English. This model was designed primarily for elementary schools, but it has significant possibilities for other situations -- especially in its rationale for identification of students and the mechanisms for scheduling students in and out of the activities.

(3) a synthesis of the framework provided by the adaptation of

the RDI model, and the program and activity implications of the SOI analysis, to provide the basis for a comprehensive program, rooted in recent theoretical developments and good practise, which should help meet the educational needs of a specified body of students.

This investigation is intended as conceptual research. The methodology was intended to be flexible enough to evolve concurrently with the conduct of the research. This procedure is compatible with the recent understanding of discovery as part of the process of writing, not necessarily as a prior condition to writing. While this method is necessarily speculative and unpredictable, it also holds promise of results that may prove more illuminating than those achieved by more conventional research methods.

Implications

This study has obvious practical implications for those wishing to implement a program for students gifted in English. It should also have value for development of similar programs in other subjects, as much of the understanding of bright students is broadly applicable regardless of the specific area of ability. Writers of curriculum, too, might benefit by looking at their products from a perspective similar to the one presented here, analyzing the curricular concepts in terms of a theoretical framework. Beyond these practical considerations, it is hoped that the study might foster an awareness that in fact our bright students' educational needs have been overlooked, and that they must be given more attention. The quality of this attention, understanding of the types of needs they have, and the feasibility of responding could be influenced by the material presented here.

CHAPTER TWO

Review of Related Literature

Intelligence

A massive literature on the whole subject of intelligence exists, and it is not the intention here to attempt a broad review. Rather, the focus is on literature pertaining to J.P. Guilford's Structure of Intellect as a model representing intellectual functioning.

Guilford's theory of intelligence (discussed more fully in Chapter Three) regards intellectual functioning as falling into three categories (operations, products and content). Each category is further sub-divided, so that a total of 120 factors are possible (5 operations x 6 products x 4 contents). The theory is based on factor analysis, a process developed by Spearman and Thurstone early in this century. It has, until very recently, "provided the principal means for understanding the nature of intelligence" (Sternberg, 1980, p. 6). While several new kinds of theories have been proposed during the past decade, none has usurped the importance of factor analysis, and none has produced as comprehensive and significant a theory of intelligence as the Structure of Intellect model. In fact Sternberg emphasizes that his component theory is not intended to supersede the factor approach, pointing out that

> although there are some important differences between componential and factor theories and the methods by which they are derived, I wish to emphasize that the two kinds

> of theories are complementary rather than conflicting: neither is intrinsically "better" than the other, and neither is a replacement for the other (1981, p. 87).

John B. Carroll (1980) commends such efforts to achieve synthesis, and comments, regarding various technical criticisms of factor analysis, that "many people make entirely too much of an issue over the alleged problems... Most factor analysts have long since settled most of these issues in a satisfactory way, and there is little point in arguing them further ..." (p. 15).

Guilford, then, used factor analysis to develop his Structure of Intellect theory. The theory has naturally been subjected to intense scrutiny and has received its share of criticism, but it has continued to serve as a fruitful basis for further psychological and educational development. Khatena (1978), for example, in commenting on the broadening understanding of giftedness, credits the SOI model with being the root for inclusion of creative thinking abilities (divergent production and transformation factors) and psychomotor abilities (figural content). He also (Khatena, 1979) quotes and agrees with Gowan's suggestion that the multi-dimensional nature of intelligence is best expressed in terms of Structure of Intellect.

In terms of actual classroom practice, Meeker (1969) uses the SOI model as the basis for curricular planning, the rationale being that once abilities have been identified, educational experiences should be provided which help develop those abilities. Doing so, she claims, would enhance the ability to learn, surely an important educational goal. For the factors, comments are made on relevant tests by which

individual SOI profiles can be obtained, and on appropriate curricular strategies to strengthen their development. By this means, guidelines are established "within a theory of intelligence which, once available to the teacher, enable her to construct creatively and comfortably individual programs for development and remediation..." (p. 183). (This writer, in fact, attended a workshop on such procedures at the Conference on the Gifted in 1981 mentioned previously, which provided the impetus for the present study.)

Guilford himself (1977) supports the exposure of children to as many of the SOI functions as possible, in order that they might gain an accurate understanding of their own strengths and weaknesses. He cites several school-based experiments on exercising of the SOI functions which appeared to show transfer gains resulting in improvement in the regular subjects.

In summary, the literature surrounding SOI reflects a variety of responses. Some criticisms are leveled against it, and these in turn are the subject of further debate. The model has therefore served as a basis for further theorizing, but so far no other comprehensive theory seems to have usurped it. It also serves as a foundation for educational development, as educators continue to explore its implications for the classroom.

Giftedness

What is giftedness? Traditionally, it has been regarded simply as high intelligence, as measured by a generally accepted I.Q. test. Placement in any sort of special program has often been based entirely

on such measurement. Getzels (1962) recognized such over-reliance, criticizing the fact that "the I.Q. (or some cognate of it) has become the critical metric on which individuals are evaluated and sorted, given preferment or denied it " (p. vii). He identified three problems with this excessive reliance on I.Q. as a definition of giftedness:

(1) I.Q. tests sample a relatively narrow range of cognitive functions, excluding, for example, the ability to invent or to innovate.

(2) While I.Q. is probably the best measure we have of the ability for academic learning, there is considerable variation in performance not accounted for by differences in I.Q.

(3) I.Q. tests have not reflected new understandings about thinking and learning.

Movement away from such a narrow and rigid basis of defining giftedness is strongly shown by 1972, in the definition developed by the U.S. Office of Education in its report to Congress, which includes five areas (Otey, 1978):

(1) intellectual ability

(2) creative or divergent thinking ability

(3) leadership ability

(4) visual and performing arts ability

(5) aptitude in a particular psychomotor activity

In the decade since this report was presented, its definition has been used or adapted in the definition of gifted students incorporated into the programs of many U.S. school districts. At the same

time, however, a considerable amount of further research has focused on the continuing problem of satisfactorily defining giftedness. Khatena (1979), for example, refers to Gowan's identification of the need for "four major shifts of emphasis related to intelligence, creativity, development, and curriculum" (Hargreaves, 1981, p. 21):

> (1) from the misleading stereotyped concept of intelligence as unidimensional to intelligence as multidimensional best expressed in terms of the Structure of Intellect;
>
> (2) from gifted child to creative individual, since we should redefine giftedness as the potential to become verbally creative, and talented as the potential to become creative in other ways (such as in the performing arts);
>
> (3) from chronological growth to development stages (continuous versus discontinuous); and
>
> (4) from acceleration, enrichment, and grouping to a qualitatively differentiated curriculum that has the capacity to induce creative performance based on stimulation of structure of intellect factors at appropriate developmental levels (Khatena, p. 698).

Expanding on the first concept, dealing with the multi-dimensional nature of intelligence, Khatena explains that

> There is no doubt in my mind that regarding intelligence as consisting of many abilities defined possibly by the Structure of Intellect is not enough; we need to recognize that "ability" is one dimension of the multi-modal construct, to which needs to be added "energy" (derived from emotive-motivational fields of forces); for ability needs to be energized before it can become active and operative (p. 699).

That such a "multi-modal construct" has implications for the whole sequence of arrangements for the gifted is also recognized by Torrance (1979), who acknowledges "the current multitalent concepts of giftedness of the disadvantaged ... , the problems stemming from pressures for uniformity in programs ... the need for open-ended methods of identification and programming for the gifted." (p. 2).

Renzulli's (1979) idea that giftedness emerges at different periods in a child's development is parallel to Gowan's developmental stages. Giftedness, he explains, should also be regarded as "differentiated" because it varies from person to person:

> Some youngsters may be gifted in mathematics but not in language arts, and others may be gifted in music or industrial arts but not in social studies. I will refer to these variations in ability as "differentiated giftedness" (p. viii).

Common wisdom among educators is that students' abilities tend to dichotomize along the English - Social Studies versus Mathematics - Science line. One assumes that a student gifted in English would have high general intelligence combined with particularly strong verbal skills - perceptiveness in reading and fluency in writing, for example. Such a division seems to be supported by the concept of differentiated giftedness. But there appears to be a dearth of research which attempts to answer the question of how the gifted English student's intellectual functioning differs from that of, for example, the gifted mathematics student.

Such analyses as do exist are primarily descriptive in nature, suggesting ways in which these students' classroom behaviors may

differ from those of less talented peers. Jewett (1960), for example, quotes Clarence W. Hach as pointing out that

> To identify the talented in English, which involves not only the well-known four language arts of reading, writing, speaking, and listening and all of their complex areas, but also an appreciation and understanding of literature, knowledge of semantics and grammar, and an awareness of the power of language, we need to concern ourselves with many factors of identification. We need to know about a student's reasoning powers; his creativity; his imagination; his academic aptitude; his achievement in reading, writing, spelling, grammar, speaking, and listening as evidenced by objective test data and school marks; his work habits and industry; his ability to work with his peers; and his innate interest ... (p. 14).

Agreement is obvious in the literature, then, that giftedness must be regarded as multi-dimensional, that I.Q. no longer serves as an adequate identification of giftedness, and that the curricular provisions to be made must be for a curriculum which emphasizes flexibility and creative performance.

Curricular Provisions

If a special program is to be established for gifted English students, it must have aims which would carry these students beyond the demands of the regular curriculum. Jewett suggests that because they are potential leaders in various fields, they will need to com-

municate clearly with highly educated audiences. Their writing should therefore show a high degree of fluency, analytical precision and aesthetic perceptiveness. Bright students are often reading below their potential, but with training they "can derive more meaning and pleasure from mature works of high literary quality" (p. 11) than can other students. The goal should be development of critical faculties, philosophic awareness, emotional sensitivity, and aesthetic response. More basically, Jewett states that the special English program must develop the students' ability to engage in the higher mental processes:

> ... to do independent and original thinking, to perceive form and aesthetic qualities in literature, to search out underlying nuances, to understand abstractions, to interpret symbols, to read critically, to think and write fluently ... (p. 17).

This underlying goal clearly articulates part of the qualitative aspect of an enrichment program; but Gowan's fourth suggested shift in thinking - to the induction of creative performance - demands involvement beyond that suggested by Jewett.

Whatever adaptations are made to the curriculum, they have generally been one of three types: acceleration, enrichment within ability groups, and enrichment within the normal classroom. Jewett describes the features of each model, gives examples of each, and presents the arguments for and against such arrangements. That the same models have continued to serve as the basis for most special programming can be readily verified by ascertaining details of curricular and administrative arrangements described in the literature.

Briefly, acceleration involves working at a faster rate, taking more material during the high school years, or taking the regular program faster in order to graduate early. Probably the best known of the acceleration provisions are those offered by the Advanced Placement Program in the U.S., which allows students to take special courses in high school, then satisfy examination requirements and receive college credit.

Grouping by classroom on the basis of ability may be called streaming, segregation, differentiation, homogeneous grouping, or a number of other terms. It occurs when the school decides on a particular trait for which grouping will occur, and then decides on a mechanism by which it is arranged. For academic enrichment, there appear to be two main possibilities for grouping. Top students are placed together for their whole program and take "special" classes in every subject; or alternatively they are grouped for one or more subjects into a "special" class for which they enroll (or into which they are placed) on the basis of strength in that area. There are many examples in the literature of special English courses offered to classes of high-ability students.

The final type of arrangement, for enrichment within the regular classroom, usually means having selected pupils work individually or in groups on specially designed activities. Several programs involve heterogeneous classroom groupings, with students from the class participating on a voluntary basis in extra reading activities centering on the ideas discussed in class. Other special arrangements may involve selected students' use of community resources such as libraries, theatres and newspapers.

In the twenty-odd years since Jewett's investigation and analysis, little has changed. While the specifics of curricular content vary from place to place and time to time, on the whole the models themselves have remained constant. However, the emphasis on differentiation in recent research suggests modifications should be made both in the basis of selection of students for participation and in the arrangement and content of the program itself.

CHAPTER THREE

Structure of Intellect Model and Implications

J.P. Guilford's (1967) Structure of Intellect Model was developed in order to give an empirically-based, "systematic theoretical foundation" (Preface) to the concept of intelligence. Earlier views of intelligence had regarded it as unified and hierarchical, but the SOI model is based on factor theory, which posits that intelligence is made up of a number of factors that the individual will possess in varying degrees. It "utilizes a dimensional type of model, in which each factor is represented by a unique dimension in common-factor space" (p. 65). A person, a test, or an activity can then be described by reference to factor position.

In devising his system, represented by the model shown in Figure 1, Guilford used the complex mathematical procedures involved in factor analysis of the items on various intelligence tests, which showed that intellectual functioning seems not to be hierarchical, nor does it seem to be represented by a few broad group factors and many narrow group factors. Rather, the factors seem to be about equally general and, furthermore, they have parallel rather than identical properties (for example, a different ability is involved in the content of verbal and non-verbal test items, even when the psychological operation is the same).

The SOI model is divided into three categories, each shown by one dimension. Various intellectual functions are represented by the five operation categories. Cognition is "awareness, immediate

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Material on this page was Figure 1, Structure of Intellect Model, from Guilford, J.P. The Nature of Intelligence. Toronto: McGraw - Hill, 1967, p. 63

discovery or rediscovery, or recognition of information in various forms; comprehension or understanding" (p. 203). The variety of terms results from the variety of forms of information which is cognized, since different kinds of cognition would be brought to bear on different kinds of products. Memory concerns long-term storage of cognized information "with some degree of availability ... in the same form in which it was committed to storage and in connection with the same cues with which it was learned" (p. 211). Information will be remembered only if it has been cognized, either consciously or unconsciously, and, in turn, it will affect the ability to cognize new material. As with the other operations, this function will occur relative to particular products of information in particular content categories, so that the information remembered may be a figural unit, a symbolic relation, etc. Divergent production involves the retrieval from memory, and frequently the re-organization, of information -- "generation of information from given information, where the emphasis is on variety and quantity of output from the same source; likely to involve transfer" (p. 213). It differs from convergent production in that the latter is much more restricted, with the output being more limited, and the criteria for success being more rigorous. While the aim of divergent production is a variety of products, that of convergent production is one unique, specified product (or "answer"). Evaluation is "a process of comparing a product of information with known information according to logical criteria, reaching a decision concerning criterion satisfaction" (p. 217). The requirement for logical criteria is significant in the context of this investigation, excluding as it

does moral or aesthetic judgements. (Guilford does not acknowledge the philosophical logic brought to bear on issues of ethics and aesthetics.) Therefore he does not claim that this factor accounts for all decision-making; it is simply one factor among many -- including moral and aesthetic considerations -- brought to bear in problem-solving.

The two remaining categories of the SOI model -- content and products -- have to do with kinds of information to which the intellectual operations are applied. Figural information "is in concrete form, as perceived or as recalled in the form of images" (p. 227). It might include such properties as size, shape, and colour. Symbolic information "is in the form of signs, materials, the elements having no significance in and of themselves, such as letters, numbers, musical notations and other "code" elements" (p. 227). The code elements can then be combined in a variety of ways, most of them leading to semantic information, primarily verbal thinking and communication. Finally, behavioral content is

> information, essentially non-verbal, involved in human interactions, where awareness of attention, perceptions, thoughts, desires, feelings, moods, emotions, intentions, and actions of other persons and of ourselves is important (p. 77).

Guilford uses the distinction between substance and form to clarify the difference between content and product categories, the latter having to do with the way or form in which information occurs. A unit is a "thing", with a unique set of properties, which can (although it need not) exist by itself. The actual unit will vary in accordance

with the content category: a word meaning, for example, is the most common instance of a semantic unit, but an idea would be a unit of divergent production. When a set of units has common properties, it becomes a class. Relations express connecting links, such as "larger than", "opposite to", part-whole, verb-object, etc. Interacting or interdependent parts can be organized into a system, such as a mathematical equation, an outline, or a behavioral system by which to achieve a particular goal. Transformations are the ideas by which products can change. Through modification of a sentence, for example, the connotation of a word might shift; or by adding information, interpretation of a comment might be revised. The concept of implication involves something expected, anticipated or predicted from the given information. In the semantic realm, this may involve prediction of difficulties or consequences, elaboration of a plan, or logical judgement. It may be thought of in terms of an "if - then" construct.

The SOI model not only presents a way of thinking about intelligence; it has implications for education, which attempts to foster development of intelligence. Application of the model to curricular and methodological concerns should provide information about current practice, and suggest possibilities for future direction. It is with these purposes in mind that the model is used as the basis for analysis of the "Statement of Content: English 10 - 20 - 30" (Iveson, 1982, pp. 21-29).

The Statement of Content is divided into concepts (relatively broad statements which apply to all three levels) and their constituent skills (which are specific to each course). Concepts are given

for each of the five Language Arts strands: writing, reading, viewing, listening and speaking. Each concept is considered below, with reference to the SOI model; since the content factor is semantic in all cases, discussion will focus on the operation and product categories.

Writing Concepts

1. Appropriate pre-writing strategies can assist a writer in discovering and expressing meaning.

The student is expected to brainstorm, to consider various possibilities for topics, to select appropriate material, to plan his composition, and to allow for new ideas as he writes. These functions clearly fall into the factor of divergent production. Recognition of "the value of drawing on personal ... experience" would be a memory operation. Both are followed by evaluation, since the writer will have to judge his ideas against criteria for their suitability for the composition at hand. The product category also involves at least two factors: each idea formulated during the brainstorming stage would be a unit, while the plan of the composition would be a system. Further, depending on the ideas which occur between the brainstorming and actual planning, there could easily be, for example, discovery of similarities (classes), differences (relations), change in form (transformation), and cause-effect relationships (implications). Because of the very nature of the discovery aspect of this concept, then, the intellectual operations which could occur cover a very wide range of products. The thinking here is particularly crucial, since it will serve as the foundation for further intellectual activity as the writing

proceeds. Narrow operation and product functioning would restrict the writer's discovery and expression of meaning.

2. Appropriate organization and development of meaning are essential qualities of written composition.

The key words here are "appropriate" and "development". There is not one "right" choice; rather, there are numerous possibilities, and the writer must develop his composition in a way which suits his purpose. Divergent thinking and evaluation are once again, then, the operations involved, and the product will be a system of interrelated parts.

3. Effective revision involves careful evaluation of ideas and a further shaping of the composition.

In its emphasis on judgement, this concept obviously involves evaluation. The logical criteria involved are those concerning adequacy of development, precision of diction, reasoning, and so forth. The skill of proofreading for errors demands convergent production. The product may be both transformations ("I want to change this word in my poem to evoke a sharper image.") and implications ("With this change, does my title still work?").

4. A writer's ideas and experiences can be presented through various modes of discourse.

In indicating a variety of possibilities, this concept suggests divergent production, and the mention of particular modes (journal writing, personal essays, short stories, poems, report, literary criticism) implies the systems factor.

5. A writer should use an appropriate prose form for his intention.

Again, divergent production of a system is involved, as indicated by such requirements as to "present a convincing argument", "report on an activity or subject", "use narration and description effectively", and "present his point of view."

Reading Concepts

6. Reading is a process which demands active involvement of the reader.

This concept is less suggestive than any of the writing concepts of particular intellectual activities. Is the student simply to recognize the truth of the concept? If so, it might be considered cognition. The skill statements do not offer much more precise direction, in their specification that students "respond with increasing sensitivity ... ", "understand that ... literature involves initial reading ...; personal response; ...". The product category, however, is clearly that of implications, since whether the concept and skills are recognized implicitly or explicitly by the students, consequences can be predicted in the attitude the student brings to bear upon his reading. One specific product is demanded: a personal, social, or critical evaluation. In this case, both divergent production and evaluation are suggested, with systems being the product.

7. The study of literature can fulfill a variety of goals for the individual.

As with the concept of active involvement, this suggests the cognition of implications, given that if one recognizes the truth of the statement, certain expectations will follow.

8. Enjoyment and appreciation of literature depend on favorable attitudes, extended range of reading materials, extended range of responses and stimulation of imagination.

Although the wording of this concept differs substantially from that of the previous one, the skills involved seem to be virtually identical, both specifying reading for enjoyment, understanding and appreciation of literature. Therefore the thought processes can also be identified as cognition of implications.

9. Human experience and values can be explored through literature.

Once again, the process seems to require recognition of a principle, with development of consequent understandings having to do with examination of ideas in literature for their personal and social relevance -- thus, cognition of implications.

10. Comprehension of meaning in literature may require understanding the author's purpose, making inferences, understanding allusions and symbols.

The language of the skills section implies identification of right answers ("identify the author's purpose", "differentiate between ...", "understand the concept of ..."), so to some extent this concept requires convergent production. It also requires divergent thinking in the possible interpretations of allusion and symbols, and evaluation is involved in such skills as "recognize the possibility of a symbolic meaning", and "evaluate [the themes] validity ...". Several products are involved: units (meanings of words such as escapist, interpretive, literal, figurative, allusion, symbol, theme); systems (recognition of

the interrelatedness of the component parts of a piece of literature); transformations (particularly with regard to allusion and symbol, where meaning shifts from a reference to the connotations implied by it); and implications (when the reader is required to interpret themes in literature).

11. An informed critical response requires an understanding of literary form, structure and style.

The language used to describe the skills pertaining to this concept is much more precise; almost all the skills suggest convergent production ("understand the characteristic differences between ...", "understand the basic concepts of ..."), moving into evaluation at the senior level (for example, identify the effect created by the author's style and examine the methods by which it is achieved"). The products are units (as with the previous concept, specific word meanings are required) and systems (recognition of the interrelatedness of component parts to create a unified whole).

12. Understanding and appreciating literature is enhanced by the ability to interpret character and to recognize effective characterization.

Several operations are involved in this concept. Divergent production is required in the description of character and identification of influences; convergent production isinvolved in the recognition of methods of characterization (and possibly in the requirement to "infer the motive ..."); and judgement of quality and evaluation of approach, consistency and plausibility are evaluative. Systems and implications are the products involved in recognizing the contribution of various

elements to the overall whole of characterizing, and in understanding the cause/effect relationship within a character.

13. The significance of the action in a piece of literature is affected by the temporal and social milieu in which it was produced, and in which it is set.

Both divergent and convergent production are required here. First, the student must determine both the setting of the literature, and the milieu of its production (convergent); then he must consider various ways in which this knowledge affects other elements of the work. One product involved is units, in that the student must know the meaning of "setting". He must also understand how setting contributes to the whole structure, so systems is a second product; and implications is involved when he must judge the impact of the author's social milieu on his work.

14. In order to appreciate English literature, and develop an awareness of his literary heritage, the student should have acquaintance with some authors who have contributed to that heritage.

The emphasis implied in the skills seems to be on cognition and memory, suggested by the word "acquaintance", although the English 30 skill requires the student to "demonstrate some understanding ... through the study of ... examination of ... literature ...". With its emphasis on literary heritage, the product would be systems, the various components of which contribute to a more or less structured understanding of literary history.

15. An effective reader is able to select and use reading strategies appropriate to his purpose in reading for enjoyment, information or literary appreciation.

The reader in this case must know the various strategies available to him (cognition, memory) and be able to apply an understanding of his purpose to this knowledge in order to make an appropriate selection (evaluation). He is working with systems (the various techniques) and implications, in that he is making judgements which have consequences for his approach to particular reading tasks.

Viewing Concepts

16. Appreciation and understanding of a visual message requires an understanding of purpose.

While the language of this concept may suggest either divergent or convergent production (depending on whether we assume one "correct" purpose or several possible purposes), the wording of the skills is clearer and more limited ("the purpose ..."), indicating that the operation is one of convergent production. The product would be implications, as one would infer purpose, message and intended audience indirectly, on the basis of the material presented.

17. Elements and structure of the image strongly influence the total effect of the communication.

Cognition of units and systems is required, as the viewer must know the meaning of such terms as camera angle and framing, and then know how they are actually being used in a film. He must also engage in divergent production ("appreciate effects ...") of systems ("re-

late the elements ...", "express the relationships among ...").

18. Many "visual communications" are really audio-visual messages which use sound and image together to communicate a message.

This statement calls for cognition of systems of information (the meanings of the sounds) and divergent production of systems ("discuss the relationships between ..."; "discuss the artistic unity resulting from ...").

19. The viewer must evaluate the apparent reality created in media products.

Systems, and their application as evaluative criteria, are the product and operation involved, as the viewer, for example, discusses the characteristics of various propaganda techniques and considers their presence in his daily life.

20. Visual communication is similar in many ways to verbal forms of communication.

In its emphasis on the parallelism of elements of visual and verbal communication, this concept involves divergent production and evaluation of classes.

Listening Concepts

21. Listening is an active not a passive process.

As with the parallel reading concept (number 6), cognition is the operation involved, and implications are the products.

22. Sensitivity to ideas, tone and purpose is an integral part of receiving a spoken communication.

This concept incorporates several operations: cognition and memory ("recognize and recall ..."), convergent production ("the speaker's purpose"; "... the speaker's attitude, tone, ... bias") and evaluation ("distinguish between emotional appeal and reasoned argument"). Systems are the products, since the skills pertain to understanding the contribution of interrelated parts to the whole oral communication.

23. Listening to obtain information involves attentive, open-minded reception of the message presented.

The skills pertaining to this concept are a reiteration of those in concepts 21 and 22, and the same intellectual functions therefore apply.

24. Critical listening involves an assessment of the validity of the message presented.

A number of operations are involved here. Divergent production is required to "identify the functions and intentions ..."; convergent production is demanded to "distinguish between fact and opinion" and "identify basic persuasive techniques ..."; and assessment of the message's source, and of "the overall degree of completeness, balance and logic ..." is an evaluative operation. There are also a number of products involved. The necessity to be aware of specific word meanings (fact, opinion, flattery, fallacies, etc.) suggests units; and the analysis of the message into component parts suggests systems.

Speaking Concepts

25. The ability to speak easily, clearly and effectively is an essential communication skill.

The skills here call for divergent operation, as indicated in "clarify and extend his own thinking ...", "express his thoughts clearly when responding to literature, when generating ideas ...", etc. Depending upon the task at hand and the content of each oral message, the product could be any of the six factors, but systems seem to be most likely, in the implication of somewhat extended and coherent talk ("... use of vocabulary to convey ideas and feelings ..."; "use voice ... communicate meaning, mood and interest").

26. The ability to function effectively in a group includes using talk to advance the purposes of the group and respecting group etiquette.

The operation involved in this concept is evaluative, as the group participants must judge the quality of their contribution to the achievement of their group's purposes. (Logical criteria, often in the form of checklists, are available to facilitate such analysis.) Again, the product is systems, with each episode of group discussion being a whole composed of the interrelated contributions of the members.

27. Communication situations call for appropriate language, tone and non-verbal behavior to suit the audience, occasion or purpose.

The skills related to this concept imply both convergent and

divergent production. For example, the correct responses may be limited in such tasks as those pertaining to procedures governing a business meeting or an introduction of a speaker. More scope would be expected in other skills, such as "express his thoughts and feelings, explore ideas, and seek information ...", "develop a topic adequately ...", and "... speak persuasively in appropriate situations." Once more, systems are the products, with the emphasis on production of complete oral communications.

Implications

The concepts and skills articulated in the "Statement of Content: English 10 - 20 - 30" emphasize the productive intellectual operations (divergent and convergent production, and evaluation) over the receptive operations (cognition and memory). The latter functions may be implicit in all the concepts, however, for each product of information produced depends upon "the constituent ideas and ... parts that constitute the stored information ... retrieved ..." (Guilford, 1927, p. 214). But the emphasis in this curriculum is not on the recognition and storage of information, but on its use in generating further information.

Among the three output categories, there is greater emphasis on the categories calling for fluency and flexibility (divergent production and evaluation, each mentioned in 14 concepts) than on the more narrow and rigid operation of convergent production (10 concepts). Of course, in several instances these operations occur within the same concept.

However, there are differences worth noting in the frequency with which the operations occur within each of the five strands. This information can be summarized as follows (a concept-by-concept breakdown is located in Appendix A):

Table 1

Operations in English Curriculum Concepts

	Writing	Reading	Viewing	Listening	Speaking
Evaluation	3	5	2	3	1
Convergent Production	1	4	1	3	1
Divergent Production	4	4	3	1	2
Memory	1	2	-	2	-
Cognition	-	6	2	3	-

Note the minimal concerns of the expressive functions (writing and speaking) with the intake operations, while the three receptive strands involve all five operations (with the exception of the memory factor in viewing). Thus we see that in the Language Arts curriculum, reading, listening, viewing and, to a much lesser extent, personal experience (concept 1 demands recognition of "the value of drawing upon personal and vicarious experience" in composition), are the sources of information.

Mental operations - processing of the data - occur with all five strands, either internally, in which case it remains part of a receptive strand, or externally, in the form of written or oral communication, thus shifting to an expressive strand.

Teacher evaluation of students' understanding, of course, can only be based on what the student expresses. To some extent, his expressive ability is a function of skills specific to that strand — formulation of a thesis, achievement of unity, limitation of

content in writing, for instance. These might be labelled the "how-to's" of writing and speaking. But the actual content of his communication -- the analysis of character, perhaps, or the presentation of an argument, or the evocation of an emotion -- the "what" of the composition, whether written or oral -- these are dependent upon information received and processed through reading, viewing, listening, and personal experience.

When a student is evaluated in English, it is his writing and, to a lesser extent, his speaking that are, for the most part, assessed. But these products are the outcome of a complex interlocking series of intellectual operations in all five strands. Those students who receive the most favourable evaluations, then, would presumably be those who most capably exhibit mastery of the English curriculum concepts and skills. In turn, the level of mastery would depend upon the student's ability in cognition, memory, divergent production, convergent production, and evaluation of the various products of semantic content (disregarding for the moment such influences as attitude and physical and emotional condition).

Despite the apparently similar emphasis on the three expressive operations, more needs to be said about the relationship among intelligence, creativity, and divergent and convergent production. Guilford considers the results of several studies, and concludes that "although high IQ is not a sufficient condition for high divergent production ability, it is almost a necessary condition" (p. 168). The typical IQ test favours semantic information, and

tests cognitive abilities; that is, it tests the person's stock of verbal knowledge, and his ability to use this knowledge to produce an expected answer. As we have seen earlier, the receptive operations provide the information for all three types of expressive operations; the traditional IQ test, then, discovers the extent to which retained information can be used convergently. The same information would be required for divergent thinking, thus the conclusion that a high IQ is a necessary condition for high DP ability. But high DP individuals have to do something more with their stock of information: they must have the ability to create new information with it. Some investigations have been devoted to the study of whether this additional factor might be what is meant by creative potential, and Guilford concludes that such a claim merits support, although because of the complexity of the whole question of creativity, he does not assume that this is the whole answer.

With regard to the distribution of products through the curriculum, the systems products clearly dominate, being involved in twenty concepts. The next most frequently occurring is implications (thirteen concepts), followed by units, specifically word meanings (six concepts). The occurrence of products in the language arts strands can be summarized as follows (a concept-by-concept breakdown is located in Appendix B):

Table 2

Products in English Curriculum Concepts

	Writing	Reading	Viewing	Listening	Speaking
Units	1	3	1	1	-
Classes	1	-	1	-	-
Relations	1	-	-	-	-
Systems	4	7	3	3	3
Transformations	2	1	-	-	-
Implications	2	8	1	2	-

It is clear that the emphasis on systems occurs throughout the five strands, suggesting an analytical focus, an awareness of the way in which interdependent parts are organized to produce a whole, whether a work of literature, a song, a film, or a speech. When implications are the products, either with or without systems, the idea of systems often seems implicit. For instance, concept 10 requires the identification, statement, understanding and evaluation of themes in literature. Such interpretive functions certainly include prediction, elaboration and logical judgement -- the qualities of the implications product -- yet it must be acknowledged that they also carry with them the context of the system from which they are drawn.

The important conclusion to be drawn here is the acknowledgment that the English curriculum demands that students work with complex structures. Relatively little attention is directed toward work with units; when this products is part of a concept, it is because particular word meanings are required for use within a systems products. There is no indication that growth in knowledge of word meanings should be an end in itself. Minimal attention is paid to products of transformation, classes and relations. While Guilford indicated that a system is not dependent on quantity (it may be as short as a one

word imperative sentence, with the unstated words being understood), this curriculum obviously focuses on systems of much greater length and complexity than the single sentence, and asks students to understand how they work, and to consider their implications.

A further comment is in order regarding reading concepts number 7, 8 and 9. The designation of these concepts as involving only cognition of implications obviously does not tell the whole story. These concepts, especially, read as statements of principle, rather than as suggestions for possible activity. Compare, for instance, number 7 ("The study of literature can fulfill a variety of goals for the individual.") with number 10 ("Comprehension of meaning in literature may require understanding the author's purpose, making inferences, understanding allusions and symbols."). The teacher may discern some of the possible mental activities in which her students could engage for the skills in the latter concept; she is unlikely to be able to for the former. Because of the vagueness of the implied actions, we can only work with the statement of principle. We must assume that classroom activities would call upon further functions (as, indeed, would be the case with all the concepts and skills), but we cannot infer from the statement what they might be.

One further comment is required, concerning Guilford's analysis of learning as it relates to the SOI model. He proposes that knowledge about intellectual factors, which has replaced the understanding of intelligence as broad powers of the mind, means that learning is much more specific than had previously been believed. Obviously, if a student has varying abilities, he will learn the individual school

subject with varying degrees of competence. The question of developmental rate also arises in connection with differentiated abilities – that is, do the abilities mature at varying rates? Through analysis of various intelligence tests administered at different ages, Guilford (1967) concludes that in two language areas, 80 percent of maturity is not reached until early adulthood, on the average:

verbal comprehension – age 18
word fluency – later than 20 (p. 420)

We assume, that a similar situation probably exists with respect to growth in many of the semantic factors; thus, training in the language arts at the high school level seems to come just during and prior to maturity.

A second concern drawn from the specificity of intellectual factors has to do with transferability. To what extent does development of skill in one factor enhance its development in others? Because of the interlocking nature of the various factors, some transfer seems to occur, but "some specific components, each unique to its own task, presumably make no contribution to transfer in terms of increased generalized abilities" (p. 475). That is, practice in cognition of semantic classes may result in some improvement in ability to cognize symbolic classes, but it will not transfer to improvement in other kinds of products because there is no general intelligence factor to link them.

Guilford therefore suggests that education should proceed along three lines, emphasizing the reception of information, the production of information, and the evaluation of information. He suggests that attention should be paid to the full range of products and operations, and that each course has opportunities for development of these factors parallel with its own specific content.

CHAPTER FOUR

Revolving Door Identification Model and Implications

The Revolving Door Identification Model (RDIM), developed by Joseph Renzulli, Sally Reis, and Linda Smith, proposes a method of identifying and working with those students who would benefit by some form of enrichment. The model's name is a slight misnomer, in that a larger portion of the book of the same title is devoted to procedures for implementing the program than to rationale and procedures for identification of eligible students.

Part of the underlying rationale for the RDIM program is the authors' rejection of "giftedness as an absolute concept" (p. ix) -- something that either exists if one "has it" or does not if one doesn't -- and of the concomitant belief that the score on an intelligence or achievement test is a sufficient indicator of the presence of giftedness within an individual. Despite support for the concepts of multiple talent and multiple criteria for selection, Renzulli claims that "the reality is that the final decision for admitting most gifted students to most programs still rests with a predetermined cut-off score on an intelligence and/or achievement test" (p. ix). Reliance upon this criterion has resulted in rather permanent placement of students in an enrichment program: once scores are determined, students can be slotted, and that is that until the next year.

Renzulli proposes the RDIM as a sound and feasible alternative

to these procedures. Figure 2 depicts the framework for the program. It is based on building blocks of practical realities (bottom row) and idealistic concerns (second row) which both contribute to the three interacting dimensions above: conception (of giftedness), curriculum, and program development (broadly, administration and management concerns).

The definition of giftedness proposed by Renzulli is illustrated in Figure 3. Its basis is three interlocking components, each of which is an equal element in gifted behavior (creative productive involvement in a specific performance area). In including above-average ability as one cluster, Renzulli accepts the validity of tests in screening out those of average or below average general ability. However, he cites substantial research in arguing against the assumption that high scores equate with high creative/productive potential. Thus (as was also mentioned in regard to Guilford's discussion of divergent production) above-average ability is a necessary, but not a sufficient, attribute of the gifted individual.

A second component of the definition of giftedness is creativity, which should be assessed on the basis of actual products. While recognizing the problem of subjectivity in judgement, tests of creative potential have problems as well, in terms of validity and reliability. Thus, three guidelines are proposed: first, the criteria

> for creative accomplishment were formulated <u>within</u> specific performance areas ... <u>by</u> persons who have specialized expertise in the particular area. Second, the judgment of qualified persons (including peers) is the major procedure for ident-

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Material on this page was Figure 2, Dimensions of Programs for the Gifted and Talented, from Renzulli, J.S., Reis, S.M., Smith, L.H. The Revolving Door Identification Model. Mansfield Center, Conn.: Creative Learning Press, Inc., 1981, p. 2

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Material on this page was Figure 3, Graphic Representation of the Definition of Giftedness, from Renzulli, J.S., Reis, S.M., Smith, L.H. The Revolving Door Identification Model. Mansfield Center, Conn.: Creative Learning Press, Inc., 1981, p. 28

> ification. Finally, and perhaps most important, judgments are based on the actual performance (or products) of the nominees rather than traditional predictors of performance such as test scores or grade point averages (p. 22-23).

Task commitment is the final quality contributing to high creative/productive capacity; it "represents energy brought to bear on a particular problem (task) or specific performance area" (p. 24). Ample research is cited to support the contention that above average ability and a capacity for creative involvement will not result in outstanding achievement without such qualities as dedication and enthusiasm.

The following definition of giftedness, then, takes into account the three qualities mentioned and, further, implies some consequent actions:

> Giftedness consists of an interaction among three basic clusters of human traits - these clusters being above average general abilities, high levels of task commitment and high levels of creativity. Gifted and talented children are those possessing or capable of developing this composite set of traits and applying them to any potentially valuable area of human performance. Children who manifest, or who are capable of developing, an interaction among the three clusters require a wide variety of educational opportunities and services that are not ordinarily provided through regular instructional programs (p. 27).

This definition serves as the basis for the identification procedures used, and the educational provisions made. A variety of psychometric tests, developmental ratings, performance assessments, and sociometric indicators are considered through two general types of information compiled formally and informally: status information provides pre-recorded data, useful for placement in the "Talent Pool"; action information, usually more subjective, indicates that a student is actually interested in pursuing a particular project and should be revolved into the program.

The Talent Pool consists of students "who are above average in one or more areas of general ability and/or one or more specific performance areas" (p. 50). Field testing of the RDIM indicated that schools with close to a normal distribution of scores on intelligence and/or achievement tests would likely place about 20 percent of their students in the Talent Pool. Individuals can be added at any point during the school year-- the point of the pool is inclusiveness, rather than exclusiveness. Detailed procedures are suggested for compiling the list of Talent Pool students.

Certain services will be provided to all students in the Talent Pool, whether or not they are at the stage of actual participation in a project. All such students, for instance, should receive orientation to the enrichment program. They should all participate in what Renzulli labels "Type 1" and "Type 2" enrichment activities - the former to spark interest in various ideas which might be followed by individuals or small groups, the latter to develop creative and logical thinking abilities and specific research skills.

"Type 3" enrichment activities, intensive involvement with a particular project, grow out of the first two types of enrichment activities. During these procedures and regular classroom experiences, data should be gathered about learning styles and particular interests of Talent Pool students, in order that informed suggestions can be made to them which might result in their being revolved into this third level. Each Talent Pool student will also be considered for Curriculum Compacting, a procedure whereby a course is streamlined in order to overcome the boredom that often results when teaching must be aimed at the average, and also in order to achieve some extra time for pursuit of individual projects.

When the student has reached the point of creative/productive involvement with an idea, and is revolved into the Resource Room (which is where Renzulli proposes that the Type 3 activities will occur), his learning activities will be focused on the production of some creative work, which is the paramount aim of the program. It is important to note that the child does not stop being a "learner" at this stage, to become entirely a "doer". If he is writing a story, for example, he may need to do some work with his Resource Room teacher on characterization. The teacher is responsible both for guiding the student as he discovers what he needs to learn, and for helping him find the means by which to learn it. When the project is finished, it is shared with a suitable audience, and the student is rotated out of the program after the project is evaluated. The problem of making a qualitative judgement is acknowledged, and Renzulli provides an assessment form to assist with this function.

Also crucial both educationally and economically is competent evaluation of the program. Any curriculum must include a component for its assessment, in order that judgements can be made about the extent to which it is meeting its objectives and that appropriate revisions can be made. A series of student, parent and teacher questionnaires is suggested, along with teachers' monthly reports, and principals' reports of incidents pertaining to the program (such as telephone calls, student comments, and so on). These would be used together to compile an assessment of the program.

Implications

In a brief discussion of possibilities for modifying the RDIM for secondary levels, Renzulli suggests that the main concerns would be the need to meet specific requirements for graduation, and the usual departmental structure of secondary schools. Both these factors apply to the Alberta situation.

A graduating student must have accumulated fifteen credits in English. For matriculation students, these would generally be attained through English 10, 20 and 30, although provisions exist for replacing English 20 with two half-course Literature or Communications modules (which can also be taken in addition to the regular courses).

The principal of each school is responsible for seeing that the educational offerings are in accordance with provincial requirements. In the case of English, this would mean that the statement of concepts and skills provides the basis for instruction, that the philosophy underlying the statement is honoured, and that the minimum literature requirements are met. The latter consist partly of titles of author-

ized texts and partly of quantity requirements, although procedures are available for departure from these regulations. Evaluation is a school and system, rather than direct provincial, responsibility. Such provincial tests as are administered from time to time are apparently for the purpose of establishing norms and gathering curriculum-evaluation data, rather than for the purpose of evaluating individual students' mastery of course content.

One of three approaches would be required for any modification for enrichment. First, the letter of the rules could be followed, so that the teacher would try to "cover" every skill, meet the exact literature requirements, and then try to add the enrichment. Secondly, teachers could ascertain that among students for whom enrichment is a possibility, many of the skills required for the grade level are already functional, thereby reducing the time spent directed toward their achievement, and substituting others more suitable for the level of these students. They could also receive permission from their superintendent to replace provincially authorized titles with others more appropriate for such special purposes. The third possibility is to develop a complete "locally designed course" and submit it for provincial authorization. The second approach seems most workable, as it retains provincial requirements as a framework, yet allows scope for the qualitative differences required, which the first procedure does not. The third alternative could be seen as intimidating and useless paperwork, the relevance of which might be lost within a few years.

Renzulli's second general concern for secondary schools -- their departmental structure -- is also relevant to the Alberta situation. While this writer is aware of no specific evidence on the matter, it seems clear that most high schools in the province operate on the "teacher-of-a-subject" basis, rather than the "teacher-of-a-class" system common to elementary schools. While in many cases, teachers do teach more than one subject, they usually do so on the basis of some assumption of expertise, rather than out of a belief that at the high school level one class should have only one or two teachers for its whole day.

What are the implications of departmentalization for this enrichment model? One certainty is that the student will be in contact with many more teachers than is likely at the elementary level. While the elementary school teachers would therefore observe students' behavior and responses vis-a-vis many subjects, the high school teacher's observations would be limited to only one or two subjects. Whether this would affect the teacher identification of gifted students or not is questionable. Secondary teachers are, we are given to understand, specialists, while elementary teachers are generalists. Likewise, we hear that secondary teachers are subject-oriented while elementary teachers are student-oriented. Whether or not these assumptions are true, and whether, if so, they would affect accurate identification, might be a consideration for further study.

In any case, Renzulli suggests that Talent Pools be established for each of the core academic subjects (English, Social Studies, Mathematics, Science). This seems reasonable for the Alberta situation,

as other opportunities generally exist for development of special student talent and interest in other areas -- Drama, Music and Art courses, for example, for the student whose giftedness is in those performing areas, or various organizations such as Students' Union, the school newspaper, or various school teams to accommodate those with applicable abilities.

Consideration would need to be given to the question of homogeneous groupings of Talent Pool students in the subject classrooms. Are all the "good" English students to be placed together or spread through all the matriculation English classes? The whole question of homogeneous versus heterogeneous grouping is, of course, one that has engendered fierce debate, and literature can be found supporting both sides of the issue. However, the controversy seems not to centre around the question as to whether grouping allows for greater academic enrichment; rather the quarrel seems to be about whether bright students should be separated from the average, whether such separation would produce snobs, unable to communicate with "real people". However, the opposite may prove to be the case. For the first time, many students may find that they are not at the top of the class. They may experience what it is like to be "average" in their group. Likewise, the "average" student in a classroom with the brightest removed may now fill in that place. Studies have shown that the remaining students contribute significantly more to class discussions, and improve their self-concepts since they may now become the leaders in the class (Roth, p. 45). Personal experience and conviction, combined with some research support, then, leads this writer

to opt for homogeneous grouping.

However, within this alternative there are still further decisions to be made. Is the grouping to be done on the basis of the school's decision once students are identified? Or are students and parents to be informed of the possibility of such placement, and then allowed to make the decision themselves? Once a student is in a homogeneous classroom, are the Type 3 enrichment activities to be carried out there, or is a special resource teacher to be available, as is the case in the RDIM for the upper elementary grades for which it was originally designed?

This last issue is only in part a question of what would work best. In Alberta, it is overwhelmingly a question of finance: no directed provincial funding is available for special programs for the gifted. Thus, either local authorities must be convinced to direct funds away from other purposes, toward such enrichment programs, or the programs must be virtually cost-free. The question of funding is in many ways central to Renzulli's plan, which is in essence a blending of educational knowledge and practical reality. For instance, the widening of the scope of our conception of giftedness is certainly educationally valid; it is also politically astute, in that it would give more voters' children a stake in the program. More students therefore have access to differentiated education, without increasing the amount of funding required. If no funding is available, then the cost factor becomes a significant determiner of the type of program offered.

This being the case, it seems likely that such decisions as whether or not to designate a special Resource Teacher for the gifted will be made on a financial basis, and therefore such an appointment would most likely not be made. This does not cripple the implementation of an RDIM type of program, however. As suggested previously, homogeneous grouping is a possibility, as is carrying out of Type 3 enrichment activities within such a classroom; these two arrangements will provide the cornerstones for the proposals made in the next chapter.

CHAPTER FIVE

A Proposal for a Program for Students Gifted in High School English

Background: Theory and Research

The proposed program is based on Guilford's analysis of the nature of intelligence, the implications of his SOI model for English instruction, and Renzulli's proposal of a method by which to deal with gifted youngsters in school. Specifically, education in particular intellectual functions (in this case, those involved in the English curriculum), the suitability of an enrichment model, and general directions for education are based on Guilford. Renzulli has contributed the ideas of a Talent Pool, a comprehensive selection procedure, a complementary rather than a mutually exclusive relationship between the regular curriculum and the enrichment measures, and directions for enriched education. This writer has contributed a blending of the two models with the Alberta high school English situation in order to present a viable program.

According to the SOI model, it would be in order to think in terms of individuals having a specific set of factors of intelligence which would affect their performance in the Language Arts. These would be the factors in the semantic content category and, in various ways, the different operations and products categories. Ability in English is directly shown in the expressive operations (convergent production, divergent production, evaluation) and is based upon the receptive operations (cognition, memory). Skill in the latter, it will be

recalled, is a necessary but not a sufficient condition for the former. This distinction can be paralleled with that which Renzulli notes, between the lesson-learner (a competent receiver of information) and the creative/productive individual, whose reception of information is directed toward use in his own expression, which occurs in specific performance areas. Although most of the latter individuals are also included among the former, some are not, and this is the reason why Renzulli insists on the use of a variety of identification methods. Recognition of the importance of production, then, in both identification of students and classroom emphasis, is in accordance with both Guilford and Renzulli, as is the likelihood of special ability being manifested in particular areas, rather than in all areas.

The two writers are also in accord regarding the function of various educational objectives. Guilford views these as first, allowing for "the stockpiling of specific items of information" (Guilford, p. 475) to act as a resource or a basis for production, the second emphasis in education. "A third objective should be concerned with evaluation of information, or what is sometimes called 'critical thinking' " (Guilford, p. 476). Compare these with Renzulli's three types of enrichment activities: Type 1 calls for presentation of information not normally considered part of the curriculum; Type 2 involves development of thinking and inquiry skills; and Type 3 provides the opportunity for creative production. Thus we see that the three types of enrichment activities offer the gifted the opportunity to develop along lines suggested by Guilford for the enhancement of

intellectual resources.

How will high degrees of ability be apparent in English? Standard IQ and reading achievement tests, being weighted toward convergent production of semantic products, could reasonably be used to provide one criterion. But, as Guilford points out, the best indicator of creative potential is creative production, and this criterion is comparable with Renzulli's use of teacher and parent assessment of performance as another criterion. Specifically, high quality compositions of various types (oral, and perhaps visual, as well as written) -- including poetry, drama, fiction and non-fiction -- should be considered to reflect giftedness in various specific performance areas, under the general performance area of Language Arts.

Definition and Identification of Eligible Students

Students eligible for this program are those whose performance in English displays an interaction among three clusters of traits: above average general ability, high levels of task commitment, and high levels of creativity. Students who manifest, or who are capable of developing, such an interaction require a wide variety of educational opportunities and services that are not ordinarily provided through regular English instruction.

Renzulli found that schools whose test distributions approximated national norms could accommodate about 20 percent of their students in its Talent Pool, with 5 - 10 percent involved in the enrichment resource room at any one time. However, because these

were elementary schools, all specific performance areas were included. In the high school situation, a single department would logically involve fewer than 20 percent because many fewer performance areas would be relevant.

If one were to consider about 10 percent, then, to represent a reasonable target number for involvement in an English enrichment program, a high school of 900 students would be looking at about 90 students -- three classes, one per grade, to be scheduled by a procedure indicated under Administrative Arrangements. A slightly smaller school would have proportionately smaller classes, which, if permitted to actually go ahead, may require some subsidization in terms of pupil/teacher ratio. Of course, in the largest high schools, the number of classes would increase. (First consideration should be given to increasing the number of Grade 10 classes in order to enhance the viability of the program in the subsequent grades.)

A variety of methods would then be used to identify individual students to whom the definition articulated at the beginning of this proposal would apply, and who, together, would make up the English Talent Pool. As an initial screening procedure, cumulative records of incoming Grade 10 students should be examined prior to their registration for Grade 10. Assuming that the system does some type of standardized testing in Grade 9 (a fairly common procedure), it would then be a straightforward matter to identify the top 10 percent in Junior High Language Arts scores.

A further step involves soliciting Grade 9 teachers for names of students who might be potential members of the high school's enrich-

ment program. They must be made aware of the description of eligible students, and a check-list such as the one suggested by Renzulli should be forwarded (see Appendix C). Not only would such procedures locate additional students, but they are also important from the professional communications standpoint. It can only do a program good for the "sending" teachers to be aware of and, in fact, to contribute to decisions to be made about their pupils' further education.

In most cases, the names will duplicate those on the first list, but if some appear on only one, they should still be included on a master list. All these students and parents should then receive a letter of invitation to a meeting at which the operation of the special program would be described, including what might be seen as its disadvantages (greater commitment of time and energy) as well as its advantages. Since all Grade 9s' parents will no doubt have received general information pertaining to Grade 10 registration, including mention of an enrichment program and an invitation for enquiries, those who are interested but who did not receive a special letter of invitation could still attend. Thus parent- and/or self-referral becomes a third means of placing a student's name on the list. Although Renzulli recommends that such nomination should result only in consideration for the Talent Pool rather than acceptance, in the case of a high school student, and considering the further step to be taken, acceptance would be in order.

At this point, more eligible students will have been identified than can be accommodated in one Grade Ten class. However, not all

students will register for the enrichment class, mainly for two reasons: first, some students fear their marks will suffer in comparison to what they would be in "regular" English 10 (and with the Alberta Heritage Scholarships for Honours achievement in mind, this becomes an even stronger concern); and secondly, Alberta Education offers no special designation for enriched courses, so students' transcripts would show only the regular matriculation sequence. Some students will wonder why they should work harder for no official recognition. While many students and parents will acknowledge the likely benefits of a challenging program, some will be more pragmatic, and look for the higher "payoff". Those who choose to register for the program, knowing the nature of its demands, can be considered to have the motivation required for success.

Administrative Arrangements

In addition to overseeing the selection process and the actual classroom activities, the school's administration would be concerned with such functions as scheduling, in-servicing, staff selection and public relations, with a possible involvement in program evaluation as well.

For scheduling purposes, the students who opt for the enriched English program will in fact register in a special section of English 10, 20 or 30. The Department of Education course codes should be used, except that the fifth digit should be altered to provide a unique section, which is then processed as any other course. Because in most

cases there will be only one class of this course, it would have to be handled as a "singleton", a complicating but by no means unique situation, and certainly not a barrier to offering the classes.

The question of staff in-servicing and teacher selection is also a matter of administrative concern. As mentioned earlier, staff awareness and support of the program is important. While it could operate without the support of the whole staff (one way in which this program differs from the RDIM is that it does not demand active participation of all teachers) it would, of course, be better with it. For one thing, teacher morale affects the whole operation of a school; for another, teachers interact with the community, and grumbling by staff about one program could affect the way the community sees the school as a whole.

In-servicing should emphasize the nature of giftedness -- the factor or special ability aspect -- as well as the distinction between the lesson-learner and the gifted producer. Further in-service attention should be given to the nature of the gifted adolescent, with emphasis on his conflict between the desire to use and develop his individual interests and intelligence, and the weakening, but still strong, grip of peer pressure. With regard to English in particular, it could also be pointed out that mid-to-late adolescence is the time when students are reaching verbal maturity (Guilford, 1967, p. 420). If this information is well presented, teachers should understand the needs of the students, and acknowledge that they would be well met by a specially designed program. They should also realize that ability is on a continuum rather than a dichotomy, that their classroom will

continue to have some good, some average, and some mediocre students, and that working with a narrower ability range offers distinct advantages.

Selection of staff to teach the enrichment program is also an important administrative function. It may be a sensitive matter, or it may pose no problem whatever. Not every teacher is suited to this task, any more than everyone is suited to be a teacher of slow learners. In fact, many teachers do not wish to teach gifted students, for a variety of reasons. Further, few Alberta teachers will have special training, since our university Special Education classes seem to emphasize working with the handicapped. The selection of staff may therefore depend simply on which teachers are available and willing; it is to be hoped that such teachers will avail themselves of a variety of resources (professional library, supervisory assistance) to increase their expertise. The list of attributes suggested by the literature might be enough to put off any reasonably modest teachers; in general, it suggests that the teacher should not feel threatened by the gifted students' intelligence (which may be superior to his own), he should act as a facilitator of exploration rather than as a dispenser of a rigid curriculum, and he should know his subject matter well. Kaplan's (1974, p. 216) set of criteria is less forbidding than many, and is fairly representative of the types of qualities teachers of the gifted should possess:

1. Enjoy the reputation of a highly superior teacher
2. Possess emotional maturity and have a positive self-image
3. Be flexible and tolerant of diversity

4. Display a positive attitude toward gifted children
5. Demonstrate innovative approaches to teaching
6. Show evidence of superior intellectual ability
7. Be able to develop teaching strategies which engage children in the higher orders of intellectual activity
8. Have superior knowledge and performance in his own area

The teacher is the key to the success of the program. Without excellence in this respect, it is difficult to see how its aims can be met.

The whole question of community acceptance may depend upon the public relations efforts of the administration. Some citizens may have concerns about elitism (to which the administration might reply by mentioning development of full potential of all students, the existence of special programs for those unable to fulfill that potential because of handicaps, and the apparently unquestioned existence of expensive athletic, shop and music opportunities for students gifted in these fields). Others might question the expense, which, as the administration can explain, is minimal. The issue of evaluation will no doubt arise, and assurances should be given that teachers will make every effort to see that students are not penalized by participation in the enrichment program. Parents might also be encouraged to contact Alberta Education about implementing a new course code, acknowledging enriched courses. Other questions will no doubt arise from time to time in response to local circumstances, and school personnel must be prepared to deal positively with them.

Curricular Provisions

The qualities that distinguish the gifted English student dictate the nature of the provisions that must be made for him. His ability to think quickly, deeply, and broadly -- in Guilford's terms, to absorb more information, and use it for divergent production of a variety of products -- necessitates both the provision of appropriate material and the opportunity to use and extend his thinking skills. In part, this may mean the substitution of more sophisticated for "easier" literature. However, this change in itself is insufficient; it is the level of thought brought to bear on the literature that distinguishes the quality of the study.

In keeping with the RDIM, this proposal suggests that the enrichment class should operate within the usual curriculum but that the curricular requirements should be streamlined in order both to reduce boredom and to allow time for the three types of enrichment activities. The following plan suggests one sample of a conversion from "regular" to enriched programming. Two objectives might apply for this hypothetical English 10 unit on heroism:

1. To help students see that the qualities deemed heroic are a reflection of what a society or an individual values.

2. To encourage students to engage in personal reflection, expressed both orally and in writing, about heroism.

Resources for this unit would include authorized English 10 literature texts from which to draw the reading selections, and the composition texts for work on the appropriate writing skills. Man the Myth-Maker would be essential. From an examination of Greek and

and other mythologies, students could generalize about the qualities considered heroic in various cultures other than their own. Then their attention should turn to modern North American culture. They might interview their grandparents (or someone of that generation) and parents to find out whom they regarded as heroic as youngsters. Then they could compare their own heroes as young children to their ideas now. At the same time, they could be reading an appropriate novel (either as a whole class, or as a choice from two or three alternatives). Stories can be chosen which shed light on the question, and can be dealt with in any manner the teacher chooses, to meet any of the content and skill objectives in addition to the unifying thematic concept. The same applies to poems, drama or non-fiction (although teachers need not feel obliged to use all genres in every thematic unit). The degree to which sports and media personalities are objects of hero-worship might be considered, and the television portrayal of heroes would be an interesting topic of discussion and investigation. Students would be responding through talk and writing to all these activities, and opportunities for various kinds of evaluation would occur throughout.

It is essential to the success of the Alberta curriculum to realize that while this unit is being presented, students must also receive instruction in the appropriate expressive skills. They do not stop learning about and practicing writing and speaking, while "taking" literature. Thus, time would likely be spent on practice in several of these skills in order to improve expression on the topic at hand.

How would an enrichment treatment vary from that suggested above for a regular class? The differences would be brought about by application of Renzulli's compacting and enrichment procedures.

First, the teacher would have to decide what aspects of the curriculum would be redundant for the class. For example, it seems likely (keeping in mind that these students have been selected for their capability in English) that many of them would already be writing at least adequate introductions to their compositions, and developing them competently, so time would not need to be spent in formal instruction and practice in these aspects of writing, apart from their actual use in compositions. In matters of factual knowledge, also, less time would be required for mastery. Furthermore, students' reading speed would be relatively fast and, in most cases, reading would not be considered a chore, so more could be assigned and less class time allowed for it. At the same time, however, teachers must take into account the tendency of such a class to actually "cover" material more slowly than expected, because of the breadth and depth of related discussion.

Once extra time has been arranged, the teacher can begin to plan how to use it. Type 1 enrichment (the provision of information) will require a moderate amount of time. In this program, information will be taken to mean not necessarily more information, but, more importantly, a different quality of material. In the unit on the hero for instance, a third objective could be added, as follows:

3. To become familiar with the concept of archetypes in literature, through consideration of fictional and mythological heroes.

One might then add consideration of some of the Biblical heroes, heroism in the Beowulf epic and in the Camelot legends. Homer's Odyssey could be substituted for one of the novels. Perhaps Camus' "The Myth of Sisyphus" might be examined as an introduction to the modern existential hero. Not only would this material itself provide more challenge, but it could be used to develop the concept of the archetypal hero, and this could lead in turn to consideration of the hero idea in other literature, either in class or as an individual student project.

The Type 2 activities, calling for thinking, inquiry, and research skills, would probably also only require a moderate amount of time (perhaps least of the three types). Students might be introduced to some of the more esoteric library resources, perhaps also to such community resources as the National Film Board collection, newspaper archives, museums, and college or university libraries, if access can be arranged. A critical thinking program like CoRT (Cognitive Research Trust, Edward de Bono) might be suitable, and many short exercises are available in a variety of textbooks. Some word games, logic problems, vocabulary and style exercises could fall into this category, and since teachers have increasingly commented on the apparent impoverishment of many students' vocabularies, this might be a particularly profitable area of activity. It would also add some diversity to the range of product factors involved in the English curriculum. Depending on the actual work involved, some of the products could be units -- words -- which are minimally represented in the various concepts.

The main necessity, however, is probably to allow students time

for their Type 3 individual projects (allowance for creative/productive engagement in an area of individual interest being the basis of the whole model). They should be informed at the beginning of the term that such a project is a course requirement, and some library browsing time should be built into the schedule near the beginning. Students should also be reminded that any work studied or idea discussed in class might provide the basis for further development -- perhaps an author study, a comparison of two novels, an investigation of the development of comic books, or a collection of original poems accompanied by the writer's journal, or, from the hero unit, an analysis of the kind of heroism portrayed in adolescent novels.

Time should also be built in to allow sharing of these projects with other members of the class. It may be that in many cases, appropriate out-of-class audiences can be found, such as school magazines, writing contests, or teachers' publications, but in-class sharing provides an immediate, present audience for all products, and exposes both students and teacher to a wide range of interesting material.

Evaluation of the products, as Renzulli acknowledged, can be a difficult matter. It is eased somewhat by the fact that they would all pertain to the same curricular area, and that experienced English teachers are used to the comparatively subjective marking required. Some sort of marking guide, such as those found in Appendix D would be useful for both teachers and students.

Program Evaluation

Evaluation of a curriculum is important both to ensure that it is generally meeting its objectives, and to suggest possible areas of revision in order to meet them better. As with other kinds of evaluation, we might consider it to be of two types, formative and summative. The former might be either formal or informal, while the latter will almost certainly be formal.

The purpose of formative evaluation would be to suggest areas of improvement. It might be as casual as a chat with some of the participating students, or it could involve questionnaires sent to their parents. However achieved, this sort of evaluation is part of a constant process of modifications to the program.

Any evaluation used for the purpose of deciding whether or not to continue the program is summative. (Did it "pass" or "fail"?) This would perhaps be carried out by the principal, or by system personnel, often with a view to the question of funding, or expanding or limiting the program. Outside evaluation, by Alberta Education or university researchers, may be of significant value, and should be considered.

Concluding Comments

This study has presented a rationale and proposal for enrichment in high school English. Implications of Guilford's understanding of the intellect, and of Renzulli, Reis and Smith's procedures for programming for the gifted are considered. The proposal suggests a definition for giftedness in English, a means of identifying approp-

riate students, and administrative and curricular arrangements that should be made.

A program such as the one proposed would be justifiable theoretically (being in accord with research findings on the nature of intelligence), educationally (using as a framework a provincial curriculum which is compatible both with our understanding of intelligence and with recent educational developments), financially (requiring minimal cost) and politically (being inclusive rather than exclusive in nature, and voluntary rather than compulsory). Therefore, it promises to offer a worthwhile means of meeting a need that surely cannot be denied much longer: the need of a segment of our school population for an education designed actually to meet the goal of development of individual abilities espoused by the Department of Education.

Recommendations for Further Study

This study has raised some questions which have been beyond its scope to resolve. The following are areas that seem to merit further consideration:

1. Is there any relationship between SOI abilities and learning styles (as analyzed by de Bono, for example)?

2. What information could be obtained about the demands of other curricula on students, if those curricula were analyzed in terms of SOI abilities?

3. Would it be possible to prepare a detailed and precise sequence of high school English activities aimed at developing SOI abilities?

4. What is the fruitfulness of the RDIM for enrichment in other subjects? Do all subjects have creative/productive possibilities, or should enrichment in some cases be based instead on an acceleration model?

5. What enrichment programs presently exist in Alberta? Which ones recently existed, but do no longer, and why have they ceased?

6. What long-range implications could be discerned through a vertical study, following those students who have participated or are presently involved in an enrichment program?

7. If funding were available, what would be its best use within the type of enrichment arrangement suggested in this study?

If questions such as these are given due attention, our understanding of the situation of our brightest students may materially improve, with incalculable benefit to the students themselves and to the society that will be enriched by their ultimate contributions.

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APPENDIX A

OPERATION FACTORS

in the

ENGLISH CURRICULUM CONCEPTS

	Cognition	Memory	Divergent Production	Convergent Production	Evaluation
1		x	x		x
2			x		x
3				x	x
4			x		
5			x		
6		x	x		x
7		x			
8		x			
9		x			
10			x	x	x
11				x	x
12			x	x	x
13			x	x	
14		x			
15		x			x
16				x	
17		x	x		
18		x	x		
19					x
20			x		x
21		x			
22		x	x	x	x
23		x	x	x	x
24			x	x	x
25			x		
26					x
27			x	x	
TOTAL	11	5	14	10	14

APPENDIX B

PRODUCT FACTORS

in the

ENGLISH CURRICULUM CONCEPTS

	Units	Classes	Relations	Systems	Transformations	Implications
1	x	x	x	x	x	x
2				x		
3					x	x
4				x		
5				x		
6				x		x
7						x
8						x
9						x
10	x			x	x	x
11	x			x		
12				x		x
13	x			x		x
14				x		
15				x		x
16						x
17	x			x		
18				x		
19				x		
20		x				
21						x
22				x		
23				x		x
24	x			x		
25				x		
26				x		
27				x		
TOTAL	6	2	1	20	3	13

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